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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,994	12/29/2003	Alfred Monteleone	1592-1	8239
7590	07/13/2004		EXAMINER	
JOHN MAIER, III 666 AARON COURT KINGSTON, NY 12401			LEUNG, PHILIP H	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/748,994	MONTELEONE ET AL.
	Examiner Philip H Leung	Art Unit 3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-16 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 29 December 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12-29-2003.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. The drawings filed 12-29-2003 are acceptable.
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. Claim 14 is objected to by the Examiner as the term “the lines” at the last two lines has no proper antecedent basis. Correction is needed. Furthermore, there are numerous typographical errors in the specification and the claims, for example, at the end of claim 7, the punctuation mark “;” should be “.” instead; in claim 10, “ane” at line 2 should be “and”; in claim 15, “wh3erein” should be “wherein”; on page 1 of the specification, “Martin” at line 8 should be “Moretti” instead; “insulated” at line 9 and “but” at line 16 are also misspelled. It is suggested the entire specification and claim section be reviewed to correct all errors.
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin (US 5,179,259), in view of Leutloff (DE 31 43 808) or Zeffner (DE 36 39 717).

Martin shows "a microwave heating system using a heat conductive medium comprising: a heater including: a shell 500 forming an enclosure having an upper end and a lower end, a heating coil 300 located in the enclosure, the heater coil having an upper end and a lower end (see Figure 5A) and having an inverted frusta-conical shape, the upper end of the coil being larger than the lower end, a plurality of magnetrons (502, 504; 512, 514) mounted adjacent and at the upper end of the heating coil for directing microwave energy into the heating coil, an electrical distribution system (516-582) connected to the magnetron (see Figure 5F), a return line for supplying the heat conductive medium into the heater coil adjacent the lower end of the shell, a line means connected to the heating coil toward the upper end of the enclosure and extending outside the shell; heat exchanger means connected to the line means to receive heat conductive medium and connected to the return line; and a circulator located in the return line (see Figures 6, 7 and 9). Therefore, it shows substantially every feature and structure as claimed except for the use of three magnetron with one magnetron being located at the upper end of the heating coil and the other two magnetrons being located on opposite sides of the heating coil for directing microwave energy into the heating coil. Leutloff shows a microwave water heater using a plurality of microwave generators 16 at all sides of the water containers 18 (see Figures 1-4 and the English abstract). Zeffner also shows a microwave device for heating water using a plurality of microwave generators 20 each located at the upper, the bottom and the two sides of the water vessel 10 (see Figure 2 and the English abstract). It would have been obvious to an ordinary skill in the art to modify Martin to use a microwave generator on each side of the heating coil so that

the water in the coil is subjected to even amount of microwave energy for more uniform and rapid heating, in view of the teaching of Leutloff or Zeffner. In regard to claim 4, the use of an insulating material within the microwave heating enclosure is well known in the art. In regard to claim 6, Martin also shows the use of a fan 554 for blowing air into the water heating casing (see Figure 5F and col. 13, line 54 – col. 14, line 43).

6. Claims 2, 3, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin (US 5,179,259), in view of Leutloff (DE 31 43 808) or Zeffner (DE 36 39 717), as applied to claims 1, 4 and 6 above, and further in view of Kaarup (US 4,358,652) (cited by the applicant).

As set forth above, Martin combined with Leutloff or Zeffner shows every feature and structure as claimed except for the explicit showing of the use of a pressure valve and/or a water leakage detector. Kaarup shows that it is well known in the art of microwave water heaters to use a pressure relief valve 34, 35 and 65 to adjust the pressure within the water pipes to maintain a safe pressure within the heating system and also a water leakage sensor 61, 62 in the bottom of the container case and a drain system 63 and 64 to prevent damages due to water leakage (see Figure 2 and col. 3, lines 39-60). It would have been obvious to an ordinary skill in the art to modify Martin to use a pressure relief valve to prevent over pressure buildup in the heating coil system and a water leak detector to reduce damages for a safer water heating system, in view of the teaching of Kaarup.

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7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin (US 5,179,259), in view of Leutloff (DE 31 43 808) or Zeffner (DE 36 39 717), as applied to claims 1, 4 and 6 above, and further in view of Varadan et al (US 5,296,666).

As set forth above, Stubbs combined with Martin shows every feature and structure as claimed except for the microwave leakage detector. Varadan shows that it is well known in the art of microwave heating devices to use a microwave leakage sensor to shut down and/or inform the user when excessive microwave leakage is detected (see col. 3, lines 21-45). It would have been obvious to an ordinary skill in the art at the time of the invention to modify Stubbs to use a microwave leakage detector to shut down the system to protect the operator for a safer system, in view of the teaching of Varadan.

8. Claims 7, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stubbs (US 4,114,011), in view of Martin (US 5,179,259).

Stubbs shows "A microwave heating system using a heat conductive medium comprising: a heater including: a shell 16 forming an enclosure and having an upper end and a lower end, a heating coil 41 located inside the shell, at least one magnetron 36 for directing microwave energy into the heating coil, an electrical distribution system (inherent) connected to the magnetron, a return line 21, 42 for supplying the heat conductive medium into the heating coil adjacent the upper end of the shell; a feed line 22, 43 connected to the heating coil toward the lower end of the shell and extending outside the shell; a supply line 17; and means for connecting the feed line to the supply line, a domestic hot water heater including: a first heat exchanger 18 having two ends, at least one medium tube located inside the first heat exchanger,

the other branch of the supply line being connected to the medium tube at one end of the first heat exchanger, the return line being connected to the medium tube 20 at the other end of the first heat exchanger, at least one water tube located in the first heat exchanger, a second heat exchanger 19 having two ends, a water coil located in the second heat exchanger, having two ends, the water tube being connected to the water coil at both ends; and heater lines connected to the return line to convey heat conductive medium for heating purposes from the return line and back to the return line; and at least one circulator 23 located in the return line" (see Figures 1 and 2 and col. 2, line 17 – col. 3, line 32). Therefore, Stubbs shows every feature as claimed except that the return line (the inlet) is located on the upper part of the casing 16 and the outlet is at the bottom instead. Martin shows a microwave heating system for water including a frusta-conical coil system 300 inside a casing 500 and the water inlet 100 is at the bottom and the outlet 200 is at the upper part of the casing 500. It would have been obvious to an ordinary skill in the art to modify Stubbs to place the water inlet at the bottom of the housing when the heating coil is a frusta-conical shape for more efficient heating of the water, in view of the teaching of Martin. Martin also shows the electrical distribution system for connection to the magnetron as shown in Figure 5F. The exact pipe connection between the two heat exchanger and the water heater would have been a mere engineering design variation depending on the exact structural arrangement of the house being heated. In regard to claim 10, Stubbs shows the well known use of insulation 39 in the heating enclosure of the microwave heating system (see Figures 2 and 3). In regard to claim 12, Martin shows the use of a fan 554 as claimed. In regard to claim 13, Martin shows the inverted frusta-conical heating coil 300 as claimed.

9. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stubbs (US 4,114,011), in view of Martin (US 5,179,259) as applied to claims 7, 10, 12 and 13 above, and further in view of Kaarup (US 4,358,652).

As set forth above, Stubbs combined with Martin shows every feature and structure as claimed except for the water leakage detector. Kaarup shows that it is well known in the art of microwave water heaters to use a water leakage sensor 61, 62 in the bottom of the container case and a drain system 63 and 64 to prevent damages due to water leakage (see Figure 2 and col. 3, lines 39-60). It would have been obvious to an ordinary skill in the art to modify Stubbs to use a water leak detector to reduce water damages for a safer water heating system, in view of the teaching of Kaarup.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stubbs (US 4,114,011), in view of Martin (US 5,179,259) as applied to claims 7, 10, 12 and 13 above, and further in view of Varadan et al (US 5,296,666).

As set forth above, Stubbs combined with Martin shows every feature and structure as claimed except for the microwave leakage detector. Varadan shows that it is well known in the art of microwave heating devices to use a microwave leakage sensor to shut down and/or inform the user when excessive microwave leakage is detected (see col. 3, lines 21-45). It would have been obvious to an ordinary skill in the art at the time of the invention to modify Stubbs to use a microwave leakage detector to shut down the system to protect the operator for a safer system, in view of the teaching of Varadan.

11. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stubbs (US 4,114,011), in view of Martin (US 5,179,259) as applied to claims 7, 10, 12 and 13 above, and further in view of Leutloff (DE 31 43 808) or Zeffner (DE 36 39 717).

As set forth above, Stubbs combined with Martin shows every feature and structure as claimed except for the use of three magnetron with one magnetron being located at the upper end of the heating coil and the other two magnetrons being located on opposite sides of the heating coil for directing microwave energy into the heating coil. Leutloff shows a microwave water heater using a plurality of microwave generators 16 at all sides of the water containers 18 (see Figures 1-4 and the English abstract). Zeffner also shows a microwave device for heating water using a plurality of microwave generators 20 each located at the upper, the bottom and the two sides of the water vessel 10 (see Figure 2 and the English abstract). It would have been obvious to an ordinary skill in the art to modify Stubbs combined with Martin to use a microwave generator on each side of the heating coil so that the water in the coil is subjected to even amount of microwave energy for more uniform and rapid heating, in view of the teaching of Leutloff or Zeffner.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

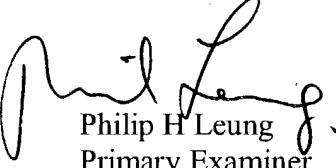
Izzo (US 6,064,047) is further cited to show a microwave water heating system having similar claimed features.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H Leung whose telephone number is (703) 308-1710.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (703) 305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Philip H Leung
Primary Examiner
Art Unit 3742

P.Leung/pl
7-9-2004